

IOWA DITCH  
Lower Rapid Valley Irrigation Ditches  
On the North Bench above Rapid Creek  
Rapid City Vicinity  
Pennington County  
South Dakota

HAER No. SD-12

HAER  
SD  
52-RACI.V,  
3-

PHOTOGRAPHS  
WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD  
Rocky Mountain Regional Office  
National Park Service  
P.O. Box 25287  
Denver, Colorado 80225-0287

HISTORIC AMERICAN ENGINEERING RECORD

IOWA DITCH  
LOWER RAPID VALLEY IRRIGATION DITCHES

HAER  
SD  
52-RACI.V,  
3-

HAER No. SD-12

I. INTRODUCTION

Location: The Iowa Ditch is located on the north bench above Rapid Creek in Pennington County, South Dakota, in the vicinity of Rapid City

Quad: Rapid City East and Box Elder

UTM: Zone 13  
Diversion: 642560 E, 4882450 N  
Terminus: 650590 E, 4880450 N

Date of Construction: c. 1896

Present Owner: Abandoned

Present Use: Abandoned

Significance: The Iowa Ditch is significant for its association with the development of irrigated agriculture in South Dakota. The ditch is a representative example of irrigation systems constructed, maintained, and operated by farmers.

Historian: Lon Johnson  
Renewable Technologies, Inc.  
Butte, Montana 59701  
February 1994

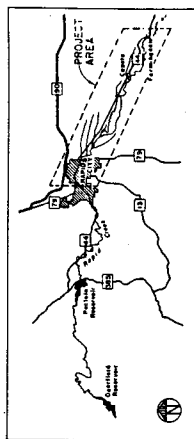
## II. HISTORY

The Iowa Ditch is located in the Lower Rapid Valley, in and just to the east of Rapid City, South Dakota. (See map on page 3.) The ditch diverts water from Rapid Creek, a major tributary of the Cheyenne River, which flows through the valley. The valley is about 40 miles long, and from one to two miles wide. By 1878, farmers occupied the valley floor from Rapid City east for a distance of ten miles. These farmers, individually and in groups, began digging irrigation ditches from Rapid Creek to bring water to their crops. Over the next decade, most of the ditches became part of farmer-owned ditch corporations. The stockholders of these corporations worked together to expand, operate, and maintain the ditches. Of the 12 or so ditch companies that have operated in the Lower Rapid Valley, seven continue to provide water to about 9,000 acres. (See HAER No. SD-5 for a historical narrative of the Lower Rapid Valley irrigation ditches.) The Iowa Ditch was the last of the farmer-owned ditches to be constructed in the valley, and is one of the ditches no longer in operation.

The Iowa Irrigation Ditch Company filed articles of incorporation on October 15, 1895. The articles listed \$125,000 in capital stock divided into 5,000 shares valued at \$25 each.<sup>1</sup> In 1915, when the corporation made application for the extension of its charter, only 699 shares had been issued. The corporation valued its assets at approximately \$15,000. The stockholders again extended the charter of the corporation in 1935 and 1955.<sup>2</sup>

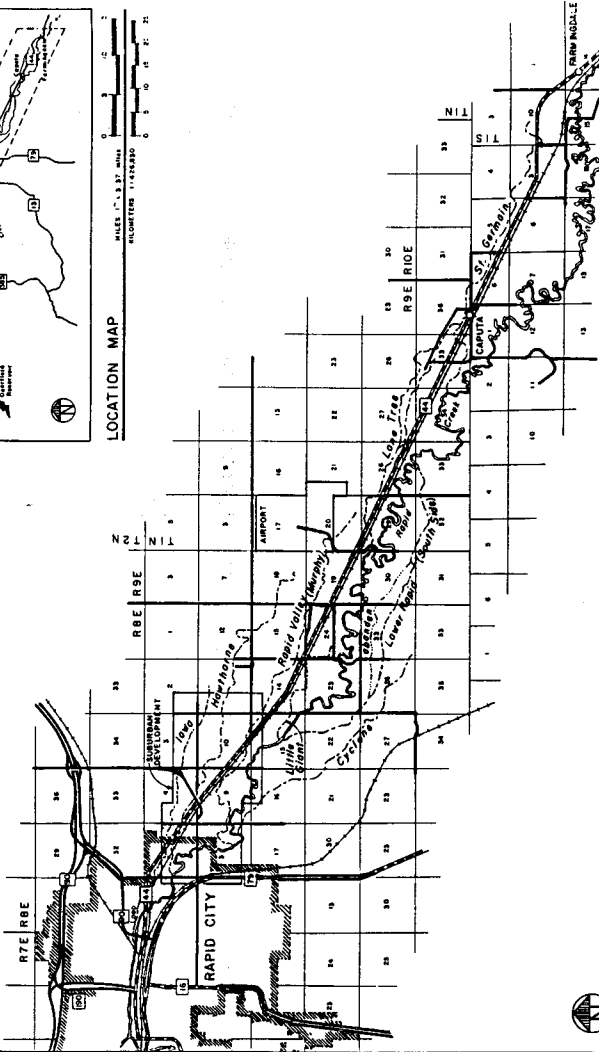
James Hartgering surveyed a route for the Iowa Ditch during the winter of 1895-1896.<sup>3</sup> The ditch was important enough on a statewide level to be described in the *Second Biennial Report of the State Engineer for the Years 1907-1908*. The report said that the promoters originally planned to construct a ditch 30 miles in length to provide water to a large area between Rapid and Box Elder creeks; the company actually constructed only 6 miles of ditch.<sup>4</sup> Claiming junior water rights to the other ditches in the valley,<sup>5</sup> the company was having difficulty providing water to the 1,023 acres supplied by the ditch.<sup>6</sup> In 1937, the Iowa Ditch was providing water to only 635 irrigable acres.<sup>7</sup>

Besides being the last irrigation ditch constructed in the Lower Rapid Valley, the Iowa Ditch was also the highest. It reached bench lands shortly after its point of diversion within Rapid City. The State Engineer found fault with the low fall of the ditch implying problems with silt built-up.<sup>8</sup>



SCALE 1" = 1.37 MILES  
KILOMETERS 1:42,480

LOCATION MAP



SCALE 1" = 1.37 MILES  
KILOMETERS 1:42,480

PROJECT AREA MAP

In his *Biennial Reports* for 1907-1908 and 1909-1910, the State Engineer noted that the promoters of the Iowa Irrigation Ditch Company were still championing extension of the ditch as originally planned. The company believed that adequate water to supply the ditch could be stored in reservoirs along the ditch route. The Engineer noted, however, that no survey had been completed to determine the feasibility of such a plan.<sup>9</sup>

In response to agitation by civic groups in Rapid City, the Bureau of Reclamation prepared a report on irrigation in the Rapid Valley in 1937. Funded by the Emergency Relief Act "for the investigation of irrigation possibilities," the report was as much concerned with providing an adequate municipal water supply to Rapid City. The report considered three storage plans. One plan combined construction of a reservoir at Pactola with a 20 mile extension of the Iowa Ditch to irrigate an additional 6,000 acres.<sup>10</sup> When project costs escalated beyond the budget, the reservoir at Pactola was scrapped in favor of a less expensive reservoir at Deer Field.<sup>11</sup>

In 1949, Rapid City officials petitioned the Bureau of Reclamation to build Pactola Dam and Reservoir. The 1952 "Definite Plan Report" for Pactola included irrigation as a justification for construction. An increased water supply was projected to allow construction of the Iowa Ditch Extension. The existing six-mile length of the ditch was to be extended to 25 miles and serve 2,200 irrigable acres. The Bureau of Reclamation saw the new irrigated farms serving as a model for other irrigators:

The influence of the Iowa Canal, where modern irrigation methods are expected to be used, will assist in bringing about better irrigation methods and greater efficiency of water on lands served by the other canals.<sup>12</sup>

For unknown reasons, the Bureau of Reclamation did not construct the Iowa Ditch Extension as part of the Pactola project.

In 1972, a flood destroyed the headworks of the Iowa Ditch. Much of the area served by the ditch had already been subdivided for urban and residential purposes, and the ditch was abandoned.<sup>13</sup>

The Iowa Irrigation Ditch Company filed a notice of intent to dissolve the company in 1973.<sup>14</sup> In 1977, the stockholders revoked the dissolution proceedings and changed the term of existence of the corporation to perpetual. The Secretary of State dissolved the corporation in 1989 for failure to file annual reports.<sup>15</sup>

### III. PHYSICAL DESCRIPTION

The Iowa Ditch originated within the corporate boundary of Rapid City. The ditch diverted water from Rapid Creek just to the east of the Chicago and Northwestern railroad bridge. All diversion and headgate structures were destroyed in a flood in 1972. The immediate area of the diversion is now a greenway, and a small shopping center has destroyed other portions of the ditch.

The ditch first makes its appearance at Chicago and Maple streets. For two blocks, the ditch parallels the north side of Chicago Street. Along this route, it is 12 feet wide at the bottom, 4 to 5 feet deep, and 25 to 30 feet wide at the top. It is lined with mature trees and overgrown with bushes. A new park has destroyed about 2 more blocks of the ditch. It then reappears along the south side of a steep slope. The one-bank, side-hill construction through this area has a substantial berm on the downhill side. The ditch is about 10 feet wide at the bottom and 2 feet deep.

From the eastern corporate limits of Rapid City, the ditch soon reaches a bench on the north side of the Lower Rapid Valley. Residential development in this area is obliterating the ditch. At a few locations, however, the subdivisions were platted when the ditch was still active and the right-of-way respected. Even on this relatively flat surface, construction of the canal consisted of throwing the excavated earth to the south side.

The Iowa Ditch headgate originally took water from Rapid Creek at about 3200 feet in elevation in Section 36, T1N, R7E. The canal then headed in a easterly direction through Rapid City, bearing slightly to the south. In Section 5, T1N, R8E, the ditch turned in a southeasterly direction, reaching the open bench land in Section 4 at an elevation of about 3180 feet. Through Sections 4, 3, 10, and 11, the canal generally followed the contour between the elevations 3160 and 3180. The Iowa Ditch terminated in a draw near the middle of the north half of Section 11.

#### IV. FUTURE OF THE PROPERTY

The United States Department of Agriculture Water Quality Hydrologic Unit Area, Lower Rapid Creek Project, in Pennington County, South Dakota, was approved for funding by the Secretary of Agriculture in December of 1990. The Iowa Ditch will not be affected as part of the project. It was included in the Historic American Engineering Record documentation as part of the mitigation for the project because of its significance.

See HAER No. SD-5 for a full description of the undertaking.

## V. ENDNOTES

1. South Dakota Secretary of State, "Articles of Incorporation of the Iowa Irrigation Ditch Company," filed 5 October 1890, File No. DB-6877.

2. South Dakota Secretary of State, "Application of Iowa Irrigation Ditch Company for an Extension of its Corporation Charter," 7 October 1915. Stockholders were listed as William F. Hall, 288 shares, Corbin Morse, 1 share, Anna M. Hall, 4 shares, Stein Bangs, 8 shares, and the First National Bank of Deadwood, 398 shares; South Dakota Secretary of State, "Application for Extension of Charter of the Iowa Irrigation Company," 10 October 1935; South Dakota Secretary of State, "Application of Iowa Irrigation Ditch Company for Extension of its Corporation Charter," 19 September 1955; File No. DB-6877.

3. Pennington County Register of Deeds, "Plat of the Iowa Ditch Company's Ditch."

4. South Dakota State Engineer, *Second Biennial Report of the State Engineer to the Governor of South Dakota for the Years 1907-1908* (Pierre: State Publishing Company, [1909]), 61-62.

5. The Iowa Irrigation Ditch Company's water right dates to March 21, 1896. They were the last filed by an irrigation company and are fifteenth in line of priority. For a discussion, see: South Dakota Department of Water and Natural Resources, "Status of Water Use on Rapid Creek," by John Hamak, 12 December 1980. Copy in Soil Conservation Service office, Rapid City, South Dakota.

6. *Second Biennial Report of the State Engineer*, 61-61.

7. U.S. Department of the Interior, Bureau of Reclamation, "Report on Rapid Valley Irrigation Project South Dakota," November 1937, 40. Copy in Library, Bureau of Reclamation, Newell, South Dakota.

8. *Second Biennial Report of the State Engineer*, 61-62.

9. Ibid.; South Dakota State Engineer, *Third Biennial Report of the State Engineer to the Governor of South Dakota for the Years 1909-1910* (Aberdeen, S.D.: News Printing Company, [1911]), 73.



10. "Report on Rapid Valley Irrigation Project," South Dakota, B.
11. U.S. Department of the Interior, Bureau of Reclamation, "Project History, Volume I, Calendar Years 1940-41-41, Rapid Valley Project, South Dakota," by H.V. Hubbell, construction engineer, 11. Copy in Library, Bureau of Reclamation, Newell, South Dakota.
12. U.S. Department of the Interior, Bureau of Reclamation, "Definite Plan Report, Volume 1 - General Plan, Part 1 - Pactola Dam and Reservoir," Original Draft September 1951, Revised June 1952, 23. Copy in Library, Bureau of Reclamation, Newell, South Dakota.
13. U.S. Department of the Interior, Bureau of Reclamation, "Rapid Valley Water Management Study Appendix," Appendix J, July 1990. Copy in Soil Conservation Service office, Rapid City, South Dakota.
14. South Dakota Secretary of State, "Statement of Intent to Dissolve the Iowa Irrigation Ditch Co.," filed 15 February 1973. File No. DB-6877.
15. South Dakota Secretary of State, "Statement of Revocation of Intent to Dissolve of Iowa Irrigation Ditch Company;" South Dakota Secretary of State, Joyce Hazeltine, Secretary of State, Letter of Dissolution to Iowa Irrigation Ditch Company, July 1989; File No. DB-6877.

## VI. SELECTED BIBLIOGRAPHIC CITATIONS

Pennington County Register of Deeds. "Plat of the Iowa Ditch Company's Ditch."

South Dakota Department of Water and Natural Resources. "Status of Water Use on Rapid Creek," by John Hamak. 12 December 1980. Copy in Soil Conservation Service office, Rapid City, South Dakota.

South Dakota State Engineer. *Second Biennial Report of the State Engineer to the Governor of South Dakota for the Years 1907-1908*. Pierre: State Publishing Company, [1909].

\_\_\_\_\_. *Third Biennial Report of the State Engineer to the Governor of South Dakota for the Years 1909-1910*. Aberdeen, S.D.: News Printing Company, [1911].

South Dakota Secretary of State. "Application for Extension of Charter of the Iowa Irrigation Company." 10 October 1935. File No. DB-6877.

\_\_\_\_\_. "Application of Iowa Irrigation Ditch Company for an Extension of its Corporation Charter." 7 October 1915. File No. DB-6877.

\_\_\_\_\_. "Application of Iowa Irrigation Ditch Company for Extension of its Corporation Charter." 19 September 1955. File No. DB-6877.

\_\_\_\_\_. "Articles of Incorporation of the Iowa Irrigation Ditch Company," filed 5 October 1890. File No. DB-6877.

\_\_\_\_\_. Joyce Hazeltine, Secretary of State. Letter of Dissolution to Iowa Irrigation Ditch Company. July 1989. File No. DB-6877.

\_\_\_\_\_. "Statement of Intent to Dissolve the Iowa Irrigation Ditch Co.," filed 15 February 1973. File No. DB-6877.

\_\_\_\_\_. "Statement of Revocation of Intent to Dissolve of Iowa Irrigation Ditch Company," filed 20 July 1977. File No. DB-6877.

U.S. Department of the Interior. Bureau of Reclamation. "Definite Plan Report, Volume 1 - General Plan, Part 1 - Pactola Dam and Reservoir." Original Draft September 1951, Revised June 1952. Copy in Library, Bureau of Reclamation, Newell, South Dakota.

\_\_\_\_\_. "Project History, Volume I, Calendar Years 1940-41-41, Rapid Valley Project, South Dakota," by H.V. Hubbell, construction engineer. Copy in Library, Bureau of Reclamation, Newell, South Dakota.

\_\_\_\_\_. "Report on Rapid Valley Irrigation Project South Dakota." November 1937. Copy in Library, Bureau of Reclamation, Newell, South Dakota.

\_\_\_\_\_. "Rapid Valley Water Management Study Appendix," Appendix J. July 1990. Copy in Soil Conservation Service office, Rapid City, South Dakota.